REMARKS

The Official Action mailed December 30, 2002 has been received and its contents carefully noted. Filed concurrently herewith is a *Request for One Month Extension of Time*, which extends the shortened statutory period for response to April 30, 2003. Accordingly, the Applicants respectfully submit that this response is being timely filed.

The Applicants note with appreciation the consideration of the Information Disclosure Statements filed on June 9, 2000 and May 2, 2002. The Applicants note, however, that the Information Disclosure Statement filed March 2, 1999 has not been acknowledged. The Applicants respectfully request that the Examiner provide an initialed copy of Form PTO-1449 evidencing consideration of the Information Disclosure Statement filed March 2, 1999.

Claims 5-9, 16-18, 20-22, 24-38, and 40-44 are pending in the present application, of which claims 5, 7, 16, 20 and 40-43 are independent. Claims 5-9, 16, 20 and 40-44 have been amended to better recite the features of the present invention. For the reasons set forth in detail below, all claims are believed to be in condition for allowance.

Paragraph 2 of the Official Action rejects claims 5-9, 16-18, 20-22, 24-38 and 40-44 as anticipated by U.S. Patent No. 6,087,679 to Yamazaki et al. The Applicants respectfully submit that an anticipation rejection cannot be maintained against the independent claims of the present invention. Yamazaki does not teach all the elements of the independent claims, either explicitly or inherently. It appears that Yamazaki discloses the steps of forming amorphous silicon film 503 over a substrate 501, crystallizing the amorphous silicon film 503 by a heat treatment with a catalyst element, patterning the crystallized silicon film to form an island-like semiconductor layer 508, forming a gate insulating film 509, removing or reducing the catalyst element, forming a gate electrode 513, adding an impurity element, and irradiating a laser to activate the impurity element (see col. 4-7 and Figs. 5 and 6).

However, with respect to independent claims 5, 16, 40 and 41, Yamazaki does not teach a reverse stagger-type TFT (see, for example, p. 20, line 13 to p. 21, line 20; Figs. 4A-4D).

With respect to independent claims 7 and 42, as amended, Yamazaki does not teach the steps of promoting crystallinity by irradiation of laser light or intense light, and adding an impurity to the semiconductor film to form a pair of impurity regions in the semiconductor film after promoting crystallinity by irradiation of laser light or intense light.

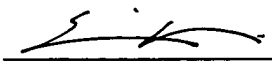
With respect to independent claim 20, as amended, Yamazaki does not teach the steps of removing the film comprising germanium from a surface of the semiconductor film without changing a shape of the semiconductor film after heating the semiconductor film, and patterning the crystallized semiconductor film into at least one semiconductor island after removing the film comprising germanium.

With respect to independent claim 43, Yamazaki does not teach the steps of removing the promoting material from the crystallized semiconductor film after the heat treatment, promoting crystallinity of the crystallized semiconductor film by irradiation of laser of intense light after removing the promoting material, and patterning the crystallized semiconductor film to form at least one semiconductor island after irradiation of laser or intense light.

Since Yamazaki does not teach all the elements of the independent claims, either explicitly or inherently, an anticipation rejection cannot be maintained. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 102(e) is in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend the claims as follows:

5. (Amended) A method of manufacturing a semiconductor device [an electroluminescence display device], comprising the steps of:

forming a gate electrode over an insulating surface;

forming a gate insulating film over the gate electrode;

forming a semiconductor film comprising amorphous silicon over the gate insulating film;

crystallizing the semiconductor film by a heat treatment while a promoting material for facilitating crystallization is retained on the semiconductor film;

removing the promoting material for facilitating crystallization from a surface of the semiconductor film after the heat treatment; and

promoting crystallinity of the crystallized semiconductor film by irradiation of laser or intense light,

wherein the promoting material comprises one or more elements selected from the group consisting of group 14 elements.

6. (Amended) A method of manufacturing a semiconductor device [an electroluminescence display device] according to claim 5, wherein said promoting material is germanium.

7. (Amended) A method of manufacturing a semiconductor device [an electroluminescence display device], comprising the steps of:

applying a solution, in which a simple substance of a catalytic element for facilitating crystallization of amorphous silicon film or a compound containing the catalytic element is dissolved or dispersed, on a semiconductor film comprising amorphous silicon;

baking said semiconductor film to form a film comprising said catalytic element on said semiconductor film;

crystallizing the amorphous silicon film by carrying out a heat treatment;

removing said film comprising said catalytic element from a surface of the semiconductor film after the heat treatment; [and]

promoting crystallinity by irradiation of laser light or intense light[,]; and

adding an impurity to said semiconductor film to form a pair of impurity regions in said semiconductor film after promoting crystallinity by irradiation of laser light or intense light,

wherein a kind of or plural kinds of elements selected from elements in group 14 are used as the catalytic element.

8. (Amended) A method of manufacturing a semiconductor device [an electroluminescence display device] according to claim 7, wherein germanium is used as the catalytic element.

9. (Amended) A method of manufacturing a semiconductor device [an electroluminescence display device] according to claim 8, wherein the compound containing the catalytic element is at least one selected from the group consisting of germanium bromide, germanium chloride, germanium iodide, germanium oxide, germanium sulphide, germane, germane acetate, tris (2,4-pentanedionate) germanium perchlorate, tetramethylgermane, tetraethylgermane, tetraphenylgermane, and hexaethyl germanium.

16. (Amended) A method of manufacturing a semiconductor device [an electroluminescence display device] comprising the steps of:

forming a gate electrode over an insulating surface;

forming a gate insulating film over the gate electrode:

forming a semiconductor film comprising amorphous silicon over the gate insulating film;

forming a film comprising germanium in contact with said semiconductor film by vapor phase deposition with a germanium compound gas;

heating said semiconductor film with said film comprising germanium to crystallize said semiconductor film; and

removing the film comprising germanium from a surface of said semiconductor film without changing a shape of said semiconductor film after [the] heating said semiconductor film.

20. (Amended) A method of manufacturing a semiconductor device [an electroluminescence display device] comprising the steps of:

forming a semiconductor film comprising amorphous silicon on an insulating surface;

forming a film comprising germanium in contact with said semiconductor film by vapor phase deposition with a germanium compound gas;

heating said semiconductor film with said film comprising germanium to crystallize said semiconductor film;

removing the film comprising germanium from a surface of said semiconductor film without changing a shape of said semiconductor film after [the] heating said semiconductor film;

patterning the crystallized semiconductor film into at least one semiconductor island after removing the film comprising germanium; and

forming a thin film transistor with said semiconductor island used as at least a channel forming region thereof.

40. (Amended) A method of manufacturing a semiconductor device [an electroluminescence display device] comprising the steps of:

forming a gate electrode over an insulating surface;

forming a gate insulating film over the gate electrode;

forming a semiconductor film comprising amorphous silicon over the gate insulating film;

forming a film comprising germanium in contact with said semiconductor film by vapor phase deposition with a germanium compound gas;

heating said semiconductor film with said film comprising germanium to crystallize said semiconductor film;

removing the film comprising germanium from a surface of said semiconductor film after [the] heating said semiconductor film; and

irradiating laser or intense light to said semiconductor film after [the] removing the film comprising germanium.

41. (Amended) A method of manufacturing a semiconductor device [an electroluminescence display device], comprising the steps of:

forming a gate electrode over an insulating surface;

forming a gate insulating film over the gate electrode;

forming a semiconductor film comprising amorphous silicon over the gate insulating film;

crystallizing the semiconductor film by a heat treatment while a promoting material for facilitating crystallization is retained on the semiconductor film; and

removing the promoting material for facilitating crystallization on a surface of the semiconductor film without changing a shape of the semiconductor film after the heat treatment,

wherein the promoting material comprises one or more elements selected from the group consisting of group 14 elements.

42. (Amended) A method of manufacturing a semiconductor device [an electroluminescence display device], comprising the steps of:

applying a solution, in which a simple substance of a catalytic element for facilitating crystallization of amorphous silicon film or a compound containing the catalytic element is dissolved or dispersed, on a semiconductor film comprising amorphous silicon;

baking said semiconductor film to form a film comprising said catalytic element on said semiconductor film;

crystallizing the amorphous silicon film by carrying out a heat treatment; and

removing said film comprising said catalytic element on a surface of the semiconductor film without changing a shape of the semiconductor film after the heat treatment,

promoting crystallinity by irradiation of laser light or intense light; and

adding an impurity to said semiconductor film to form a pair of impurity regions in said semiconductor film after promoting crystallinity by irradiation of laser light or intense light,

wherein a kind of or plural kinds of elements selected from elements in group 14 are used as the catalytic element.

43. (Amended) A method of manufacturing a semiconductor device [an electroluminescence display device], comprising the steps of:

forming a semiconductor film comprising amorphous silicon:

providing the semiconductor film with a promoting material for facilitating crystallization is retained on the semiconductor film;

crystallizing the semiconductor film by a heat treatment:

removing the promoting material from the crystallized semiconductor film after the heat treatment;

promoting crystallinity of the crystallized semiconductor film by irradiation of laser or intense light after [the] removing the promoting material; and

patterning the crystallized semiconductor film to form at least one semiconductor island after irradiation of laser or intense light,

wherein the promoting material comprises one or more elements selected from the group 14 elements.

44. (Amended) A method of manufacturing a semiconductor device [an electroluminescence display device] according to claim 43 wherein said promoting material is removed from a surface of the crystallized semiconductor film without changing a shape of the crystallized semiconductor film.